

WHAT IS CLAIMED IS:

1. A solid filling tank comprising:

a tank main body configured to be filled with solid particles capable of absorbing or adsorbing a predetermined gas; and

a heat exchanger disposed within the tank main body, wherein the heat exchanger comprises:

a circulation tube configured to circulate a medium to exchange heat with the solid particles; and

a plurality of heat-transferring fins each attached to the circulation tube and arranged in parallel to each other,

wherein the heat-transferring fins comprise a restricting portion configured to restrict movement of the solid particles in a subsiding direction of the solid particles.

2. The solid filling tank as claimed in claim 1, wherein the subsiding direction comprises a direction in parallel to the heat-transferring fins.

3. The solid filling tank as claimed in claim 1, wherein the restricting portion comprises a plurality of partitioned portions formed in between each opposing pair of the heat-transferring fins.

4. The solid filling tank as claimed in claim 3, wherein the heat-transferring fins comprise a first

heat-transferring fin formed in corrugated plate shape and
a second heat-transferring fin formed in flat plate shape,

wherein the first heat-transferring fin and the
second heat-transferring fin are arranged alternately in
5 parallel to each other, and

wherein the restricting portion comprises the
partitioned portion formed in between each of the opposing
pair of the first heat-transferring fin and the second
heat-transferring fin.

10 5. The solid filling tank as claimed in claim 3, wherein
the heat-transferring fins comprise a through hole
configured to permit the solid particles to pass
therethrough, and

wherein the plurality of partitioned portions are
15 configured to be communicated with each other via the
through hole.

6. The solid filling tank as claimed in claim 1, wherein
the solid particles comprise hydrogen absorbing alloy
powder capable of absorbing hydrogen.

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